

NON-PUBLIC?: N
ACCESSION #: 9307210237
LICENSEE EVENT REPORT (LER)

FACILITY NAME: COMANCHE PEAK-UNIT 1 PAGE: 1 OF 5

DOCKET NUMBER: 05000445

TITLE: MANUAL REACTOR TRIP INITIATED DUE TO HIGH STATOR
TEMPERATURE ON REACTOR COOLANT PUMP
EVENT DATE: 06/26/93 LER #: 93-007-00 REPORT DATE: 07/16/93

OTHER FACILITIES INVOLVED: N/A DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: DUERKSEN J. REIMER, MGR., SYSTEM TELEPHONE: (817) 897-5584
ENGINEERING

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS: N

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On June 26, 1993, Comanche Peak Steam Electric Station Unit 1 was in Mode 1, Power Operation, with the reactor at approximately at 100 percent of rated thermal power. A Control Room alarm indicated excessive temperature on the 1-04 Reactor Coolant Pump (RCP) motor stator. Component Cooling Water flow was increased to increase cooling to the RCP. Personnel were dispatched to the Containment Building to troubleshoot. These efforts were not successful in restoring the indicated temperature to normal. As a result, the Shift Supervisor directed a manual reactor trip. Subsequently, it was discovered that a faulty Resistance Temperature Detector (RTD) caused the excessive temperature indication. Another available RTD was connected to the plant computer and the circuit was functionally tested.

END OF ABSTRACT

TEXT PAGE 2 OF 5

I. DESCRIPTION OF REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

An event or condition that resulted in a manual or automatic actuation of an Engineered Safety Feature (ESF) including the Reactor Protection System (RPS).

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

On June 26, 1993, prior to the event, Comanche Peak Steam Electric Station Unit 1 was in Mode 1, Power Operations, with reactor power at 100 percent.

C. STATUS OF STRUCTURES, SYSTEMS, OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

There were no inoperable structures, systems or components that contributed to the event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On June 26, 1993, at 00:18 a.m., an alarm was received on the P-2500 computer. The alarm indicated that the Reactor Coolant Pump (RCP) 1-04 motor (EIIS:(MO)(AB)) stator temperature was at 297 degrees F and increasing. The Shift Supervisor (utility, licensed) informed the Control Room staff (utility, licensed) to prepare for manual reactor and RCP trips should the stator temperature reach 300 degrees F. Additionally, the Shift Supervisor requested Instrument and Control (I&C) technicians (utility, nonlicensed) to investigate and validate the signal. The I&C technicians tested the signal at the computer input connection and confirmed the indicated reading corresponded to the input coming from the sensor. At 01:19 the stator temperature increased to 300.2 degrees F. The decision was made to increase cooling of RCP 1-04 by starting an additional Component Cooling Water (CCW) pump (EIIS:(P)(CC)). At 1:26 a.m. CCW Pump 1-02 was started. At 1:27 a.m. the TU Electric load dispatcher was requested to raise the system grid voltage by 4kV (from about 349 kV) in an attempt to reduce the stator

current drawn by the RCP motor. A containment entry was initiated in order to throttle open the RCP 1-04 motor air cooler Component Cooling Water return isolation valve (EHS:(ISV)(CC)).

TEXT PAGE 3 OF 5

The indicated RCP motor stator temperature was escalating and the Shift Supervisor directed the personnel in the containment to exit. At 01:36 a.m. the reactor was manually tripped and RCP 1-04 was secured.

At approximately 04:00 a.m. I&C technicians entered the containment to test the Resistance Temperature Detector (RTD) at the RCP motor which was indicating excessive temperature and found the RTD to be defective.

E. THE METHOD OF DISCOVERY OF EACH COMPONENT OR SYSTEM FAILURE, OR PROCEDURAL OR PERSONNEL ERROR:

An alarm was received on the P-2500 computer that the RCP 1-04 motor stator was reaching excessive temperatures. Subsequently, I&C technicians tested and found that the stator temperature sensor, a Resistance Temperature Detector (RTD), connected to the P-2500 computer point was defective.

II. COMPONENT OR SYSTEM FAILURE

A. FAILED COMPONENT INFORMATION

The failed RTD, tag number 1-TE-0490, model S51P, is supplied by Westinghouse Nuclear Division, under Westinghouse Specification WEC-E942389.

B. FAILURE MODE, MECHANISM, AND EFFECT OF EACH FAILED COMPONENT

The failure mode of the RTD failure could not be determined.

TEXT PAGE 4 OF 5

III. ANALYSIS OF THE EVENT

A. SAFETY SYSTEM RESPONSES THAT OCCURRED

There was an auto start of Auxiliary Feedwater (AFW) pump on a Steam Generator (SG) 1-04 Lo-Lo signal.

B. DURATION OF SAFETY TRAIN INOPERABILITY

There were no safety systems rendered inoperable as a result of the event.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT

The visual inspection and testing performed after the event indicated that the actual stator temperature of the RCP motor did not reach 300 degrees F. The megger test performed confirmed that the winding did not suffer any damage.

The function of the subject RTD is to monitor RCP motor stator temperature and initiate an alarm to the P-2500 computer. As such, the device does not provide any safety function. The RCP motor itself does not provide a safety function to safely shutdown the plant. A loss of function of the RCP motor is bounded by the accident analysis contained in Chapter 15 of the Final Safety Analysis (FSAR) is a manual reactor trip from the initial conditions described above. As such, this event did not impact the health or safety of the public.

TEXT PAGE 5 OF 5

IV. CAUSE OF THE EVENT

The RTD failure for this event was abnormal, resembling an actual high temperature; therefore, the plant was tripped.

V. CORRECTIVE ACTIONS

A. IMMEDIATE

The affected RTD terminations were disconnected. Another available RTD, in the same motor, was connected to the P-2500 computer and the circuit was functionally tested.

B. ACTIONS TO PREVENT RECURRENCE

The Operation's procedure (abnormal operating procedures) has been revised to provide additional guidance to be used to anticipate actual high temperatures conditions from RTD failures.

VI. PREVIOUS SIMILAR EVENTS

There have been no previous similar events reported pursuant to 10CFR50.73.

ATTACHMENT 1 TO 9307210237 PAGE 1 OF 1

Log # TXX-93258
File # 10200
TUELECTRIC Ref. # 10CFR50.73(a)(2)(iv)

July 16, 1993

William J. Cahill, Jr.
Group Vice President

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NO. 50-445
MANUAL OR AUTOMATIC ACTUATION OF
ENGINEERED SAFETY FEATURE
LICENSEE EVENT REPORT 93-007-00

Gentlemen:

Enclosed is Licensee Event Report 93-007-00 for Comanche Peak Steam Electric Station Unit 1, "Manual Reactor Trip Initiated due to High Stator Temperature on Reactor Coolant Pump."

Sincerely,

William J. Cahill, Jr.

BY: Rodger D. Walker
Manager of Regulatory Affairs
for Nuclear Production

OB:bm
Enclosure

cc: Mr. J. L. Milhoan, Region IV
Mr. L. A. Yandell, Region IV

Resident Inspectors, CPSES (2)

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*** END OF DOCUMENT ***
